4.3 Congruent triangles

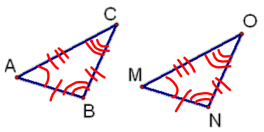
Congruent Triangles—same size and shape

$\Delta ABC \cong \Delta MNO$

$\angle A \cong \angle M$ $\quad \overline{AB} \cong \overline{MN}$

$\angle B \cong \angle N$ $\quad \overline{BC} \cong \overline{NO}$

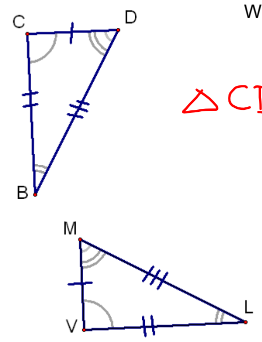
$\angle C \cong \angle O$ $\quad \overline{AC} \cong \overline{MO}$



* The corresponding parts of congruent triangles are congruent.

CPCTC

What triangles are congruent?



$\Delta CDB \cong \Delta VML$

If $\Delta THE \cong \Delta SAW$, what parts are congruent?

$\angle T \cong \angle S$ $\quad \overline{TH} \cong \overline{SA}$

$\angle H \cong \angle A$ $\quad \overline{HE} \cong \overline{AW}$

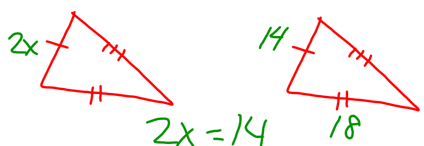
$\angle E \cong \angle W$ $\quad \overline{TE} \cong \overline{SW}$

Reflexive $\Delta ABC \cong \Delta ABC$

Symmetric If $\Delta ABC \cong \Delta MNO$, then $\Delta MNO \cong \Delta ABC$

Transitive If $\Delta ABC \cong \Delta MNO$ and $\Delta MNO \cong \Delta XYZ$, then $\Delta ABC \cong \Delta XYZ$

ex

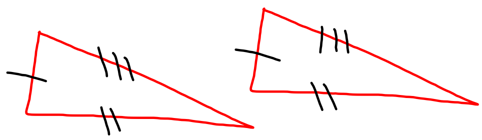


$2x = 14$

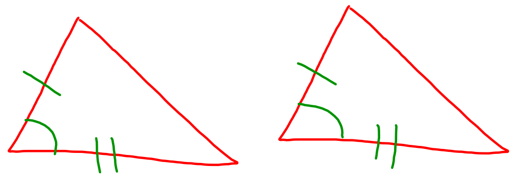
$x = 7$

4.4 SSS and SAS

Postulate 4.1--Side-Side-Side(SSS)-If 3 sides of one △ are congruent to 3 sides of another △, then the △s are congruent.



Postulate 4.2--Side-Angle-Side(SAS)-If 2 sides and the included angle of one △ are congruent to 2 sides and the included angle of another △, then the △s are congruent.

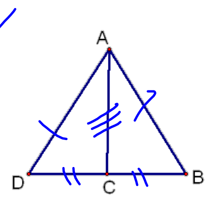


Things to keep in mind for these proofs:
Reflexive
Vertical angles are congruent
Def. of midpoint
Def. of angle bisector and segment bisector
Parallel line facts

and anything else we have learned

Given: C is the midpoint of $\overline{DB}$
$AD \cong AB$

Prove: $\Delta ADC \cong \Delta ABC$

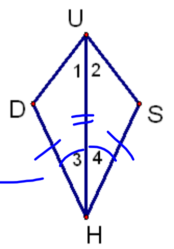


S.	R.
① C is the midpt $\overline{DB}$ $\overline{AD} \cong \overline{AB}$	① Given
② $\overline{DC} \cong \overline{CB}$	② def of midpt
③ $\overline{AC} \cong \overline{AC}$	③ Reflexive
④ $\Delta ADC \cong \Delta ABC$	④ SSS

Given: $\overline{HU}$ bisects $\angle DHS$

$\overline{HD} \cong \overline{HS}$

Prove: $\triangle UDH \cong \triangle USH$



① $\overline{HU}$ bisects $\angle DHS$, $\overline{HD} \cong \overline{HS}$	① Given
② $\angle 3 \cong \angle 4$	② def of $\angle$ Bis
③ $\overline{UH} \cong \overline{UH}$	③ Reflexive
④ $\triangle UDH \cong \triangle USH$	④ SAS

HW

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p. 203-205 5-8(2 column), 10, 16, 22-25